AFCTN Test Report 94-044

AFCTB-ID 93-077

Technical Publication Transfer

Using:

Northrop Corporation's Data

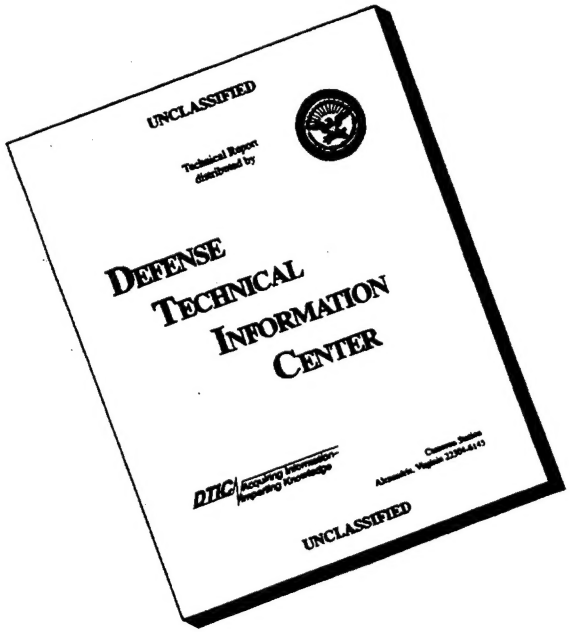
MIL-D-28000A (IGES)
MIL-M-28001A (SGML)
MIL-R-28002A (Raster)
MIL-D-28003 (CGM)

Quick Short Test Report

04 August 1993

Prepared for
Electronic Systems Center
Det 2 HQ ESC/AV-2
4027 Colonel Glenn Hwy, Suite 300
Dayton, OH 45431-1672

DISCLAIMER NOTICE



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Quick Short Test Report

04 August 1993

Prepared By
Air Force Air Force CALS Test Bed
Wright-Patterson AFB, OH 45433

AFCTB Contact
Gary Lammers
(513) 427-2295

AFCTN Contact
Mel Lammers
(513) 427-2295

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Contents

1. Introduction

1.1 Background

The Department of Defense (DoD) Air Force Continuous Acquisition and Life-cycle Support (CALS) Test Network (AFCTN) is conducting tests of the military standard for the Automated Interchange of Technical Information, MIL-STD-1840A, and its companion suite of military specifications. The AFCTN is a DoD sponsored confederation of voluntary participants from industry and government managed by the Electronic Systems Center (ESC).

The primary objective of the AFCTN is to evaluate the effectiveness of the CALS standards for technical data interchange and to demonstrate the technical capabilities and operational suitability of those standards. Two general categories of tests are performed to evaluate the standards; formal and informal.

Formal test are large and comprehensive, which follow a written test plan, require specific authorization from the DoD, and may take months to prepare, execute, and report.

Informal tests are quick and short, used by the AFCTN technical staff, to broaden the testing base. They include representative samples of the many systems and applications used by AFCTN participants. They also allow the AFCTN staff to gain feedback from many industry and government interpretations of the standards, to increase the base of participation in the CALS initiative, and respond to the many requests for help that come from participants. Participants take part voluntarily, benefit by receiving an evaluation of their latest implementation (interpretation) of the standards, interact with the AFCTN technical staff, gain experience using the standards, and develop increased confidence in them. The results of informal tests are confidence in them. The results of informal tests are reported in Quick Short Test Reports (QSTRs) that briefly summarize the standard(s) tested, the hardware and software used, the nature of the test, and the results.

1.2 Purpose

The purpose of the informal test, reported in this QSTR, was to analyze Northrop Corporation's interpretation and use of the CALS standards in transferring technical publication data. Northrop used its CALS Technical Data Interchange System to produce data, in accordance with the standards, and delivered it to the AFCTN technical staff on a 9-track magnetic tape.

2. Test Parameters

Test Plan: AFCTB 93-077

Date of Evaluation: 04 August 1993

Evaluator:
George Elwood
Air Force CALS Test Bed
Det 2 HQ ESC/AV-2
4027 Colonel Glenn Hwy
Suite 300
Dayton OH 45431-1672

Data Originator:
John P. Kent
Northrop Corporation
B-2 Division
L591/UB
8900 East Washington Blvd
Pico Rivera CA 90660
(310) 948-0624

Data Description:
Technical Manual Test
2 Document Declaration files
2 Document Type Definitions (DTD)
1 Initial Graphics Exchange Specification (IGES) file
2 Text/Standard Generalized Markup Language (SGML) files
1 Raster file
1 Computer Graphics Metafile (CGM) file

Data Source System:

1840

HARDWARE
Unknown

SOFTWARE
Unknown

IGES

HARDWARE
Unknown

SOFTWARE
Unknown

Text/SGML

HARDWARE

Unknown

SOFTWARE

Unknown

Raster

HARDWARE

Unknown

SOFTWARE

Unknown

CGM

HARDWARE

Unknown

SOFTWARE

Unknown

Evaluation Tools Used:

MIL-STD-1840A (TAPE)

SUN 3/280

AFCTN *Tapetool v1.2.9 UNIX*
XSoft *CAPS/CALS v40.4*

MIL-D-28000 (IGES)

Sun SparcStation 2

ArborText *iges2draw*
Carberry *CADLeaf Plus v3.1*
IGES Data Analysis (IDA) *Parser/Verifier v92*
IDA *IGESView v3.05*
Rosetta Technologies *Prepare*
Rosetta Technologies *Preview v3.2*

PC 486/50

AUTODESK *AutoCAD 386 R12*
Cadkey *Cadkey v5.02*
IDA *IGESView Windows*

MIL-M-28001 (SGML)

SUN SparcStation 2

ArborText *ADEPT v4.2.1*

PC 486/50

Datalogics *ParserStation v3.36*
Exoterica *XGMLNormalizer v1.2e3.2*
Exoterica *Validator v2.0 ex1*
McAfee & McAdam *Sema Mark-it v2.3*

MIL-R-28002 (Raster)

SUN SparcStation 2

- ArborText *g42tiff*
- Carberry *CADLeaf Plus v3.1*
- AFCTN *validg4*
- AFCTN *calstb.475*
- AFCTN *xrastb.sun4*
- IDA *IGESView v3.0*
- Island Graphics *IslandPaint v3.0*

PC 486/50

- IDA *IGESView Windows*
- Inset Systems *HiJaak Pro*

MIL-D-28003 (CGM)

SUN SparcStation 2

- ArborText *cgm2draw*
- Island Graphics *IslandDraw v3.0*
- Carberry *CADLeaf Plus v3.1*

PC 486/50

- Advance Technology Center (ATC) *MetaCheck R 2.10*
- Software Publishing Corporation (SPC) *Harvard Graphics v3.05*
- Inset Systems *HiJaak Pro*
- Lotus *Freelance v2.01*
- Micrografx *Designer v3.1*
- Corel *Ventura Publisher*

Standards Tested:

MIL-STD-1840A
MIL-D-28000A
MIL-M-28001A
MIL-R-28002A
MIL-D-28003

3. 1840A Analysis

3.1 External Packaging

The tape arrived at the Air Force CALS Test Bed (AFCTB) enclosed in a box in accordance with ASTM D 3951. The exterior of the box was marked with a magnetic tape warning label, as required by MIL-STD-1840A, para. 5.3.1.3.

The tape was enclosed in a barrier bag as required by MIL-STD-1840A, para. 5.3.1.2. Inspection of the tape reel showed the label indicating the recording density, as required by MIL-STD-1840A, para. 5.3.1. Enclosed in the box was a packing list showing all files recorded on the tape.

3.2 Transmission Envelope

The 9-track tape received by the AFCTB contained MIL-STD-1840A files. The files were named per the standard conventions.

3.2.1 Tape Formats

The tape was run through the AFCTN *Tapetool v1.2.10* utility. No errors were encountered while evaluating the contents of the tape labels.

A note was reported on the tape label version. MIL-STD-1840A permits the use of both version three and four. The use of the most current standard should be used and noted.

The tape was read using the XSoft *CAPS read1840A* utility, without any reported errors.

The physical structure of the tape meets MIL-STD-1840A requirements.

3.2.2 Declaration and Header Fields

No errors were found in the Document Declaration files or data file headers. This portion of the tape meets the CALS MIL-STD-1840A requirements.

4. IGES Analysis

The tape contained one IGES file. This file was evaluated using IDA's *parser/verifier*, set for CALS Class I. No errors were reported by this utility.

The AFCTB has several tools for viewing IGES files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The file was converted using ArborText's *iges2draw* utility with no reported errors. The resulting file was read into Island Graphics' *IslandDraw* and displayed. When viewed on the screen only the right part of the image displayed on the left side of the screen. The error was traced to the use of the negative X value for the start point of the file. Using an undocumented capability of the ArborText *iges2draw* utility a new file was generated. This file produced a complete image.

The file was read using AUTODESK's *AutoCAD R12* with translator version 5.1. No errors were noted and the image appear to be complete.

The file was converted using Cadkey's *ig2c* utility. The resulting files were read into Cadkey's *Cadkey* and displayed. The image appeared to be complete.

The file was read into Carberry's *CADLeaf* software without a reported error. When viewed on the screen only the right part of the image displayed on the left side of the screen. This is the same problem encountered in the ArborText utility.

The file was read using IDA's *IGESView* and *IGESView for Windows*. The image display and printed without a problem.

The IGES file was converted using Rosetta Technologies' *Prepare* without a reported error. The resulting file was read into Rosetta Technologies' *Preview* and displayed.

The IGES file meets the CALS MIL-D-28000A specification.

5. SGML Analysis

The tape contained two DTDs and two Text files. The AFCTB has several parsers available for evaluating submitted DTD and Text files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. These products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings unless specified in the report. Changes to DTD or Text files required by each system are not documented in the report.

Both Text and DTD files were evaluated using Datalogics' *ParseStation*. No errors were reported in either file.

Both Text and DTD files were evaluated using Exoterica's *Validator exl* parser with no reported errors in either file.

Both Text and DTD files were tested using Exoterica's *XGML-Normalizer* parser without a reported error.

Both Text and DTD files were evaluated using McAfee & McAdam' *Sema Mark-it* parser without a reported error.

Both Text and DTD files were evaluated using the Public Domain *sgmls* parser without a reported error.

Many attempts to imported into ArborText's *Adept* software were tried. The DTD would not parse indicating warnings with the elements "entry", "notice", and "result". The included Format Output Specification Instance (FOSI) would not import into this product.

The SGML files meet the CALS MIL-M-28001A specification.

6. Raster Analysis

The tape contained one Raster file. This file was evaluated using the AFCTN *validg4* utility. This program reported the file meets the CALS MIL-R-28002A specification.

The file was read into the AFCTN *calstb.475* viewing utility. No problems were noted. However, the image scanned at a slight angle.

The file was read into the AFCTN *xrastb* viewing utility without a reported error.

The AFCTB has several tools for viewing Raster files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor an indication of CALS capability. All operations were performed using the default settings.

The file was converted using ArborText's *g42tiff* utility without a reported error. The resulting file was read into Island Graphics' *IslandPaint* and displayed.

The Raster file was read into Carberry's *CADLeaf* software without a reported error and displayed.

The file was read into IDA's *IGESView* and *IGESView for Windows* without a reported error.

The file was read into Inset Systems' *HiJaak Pro* without a reported error.

The Raster file was converted using Rosetta Technologies' *Prepare* without a reported error. The resulting file was read into Rosetta Technologies' *Preview* and displayed.

The Raster file meets the CALS MIL-R-28002A specification.

7. CGM Analysis

The tape contained one CGM file. The file was evaluated using ATC's *MetaCheck* with CALS options. This utility reported the file meets the CALS MIL-D-28003 specification.

The CGM file was evaluated using the beta AFCTN *validcgm* utility with one reported error.

The AFCTB has several tools for viewing CGM files. These tools are not used to generate a pass/fail but to report how commercially available software can handle the files. Many of these products are used in the development of technical publications and are good indicators of usability. The use of these products is not an endorsement nor and indication of CALS capability. All operations were performed using the default settings.

The CGM file was converted using ArborText's *cgm2draw* utility without a reported error. The resulting file was read into Island Graphics' *IslandDraw* and displayed. Text overflow was noted in the block descriptions along the bottom of the blocks.

The file was viewed using ATC's *MetaView* software. Errors were noted in the fonts.

The file was read into Carberry's *CADLeaf* software, displayed and printed. Text overflow was noted in the block descriptions.

The file was read into Inset Systems' *HiJaak for Windows* with a reported error, indicating real precision was not supported. Nothing displayed.

The file was imported directly into Island Graphics' *IslandDraw* without a reported error. No text overflow was noted, but the two elliptical arcs were in error. The restricted text block also displayed in error.

An attempt was made to import the file into Lotus' *Freelance*. A Windows general protection error was reported.

The file was imported into the Micrografx *Designer* without a reported error; however, nothing displayed.

The file was imported into SPC's *Harvard Graphics 3.05* with four reported errors: Line style, adjustment of points,

non-CGM entities encountered, and non-translated entities. The displayed and printed image did not reflect the actual file.

An attempt to import the file into Corel's *Ventura Publisher* generated an error indicating the file was not the proper format.

The CGM file meets the CALS MIL-D-28003 specification.

8. Conclusions and Recommendations

The tape from Northrop Corporation had no reported errors in either the physical structure or CALS headers. The tape construction meets the CALS MIL-STD-1840A requirements.

The IGES file meets the CALS MIL-D-28000A specification.

The SGML files meet the CALS MIL-M-28001A specification.

The Raster file meets the CALS MIL-R-28002A specification.

The CGM file meets the CALS MILD-28003 specification.

The tape submitted by Northrop Corporation meets the CALS MIL-STD-1840A requirements.

9. Appendix A - Tapetool Report Logs

9.1 Tape Catalog

```
Air Force CALS Test Network Catalog Evaluation - Version 1.2; Release 10 (C)

  Standards referenced:
    MIL-STD-1840A (1987) - Automated Interchange of Technical Information
    ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes
                        for Information Interchange
    ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Tue Aug  3 15:10:07 1993

MIL-STD-1840A File Catalog

File Set Directory: /cals/u1210/Set006

Page: 1
```

File Name	File Type	Record Format/ Length	Block Length/Total	Selected/ Extracted
D001	Document Declaration	D/00260	02048/000001	Extracted
D002	Document Declaration	D/00260	02048/000001	Extracted
D001T001	Text	D/00260	02048/000001	Extracted
D001G002	DTD	D/00260	02048/000003	Extracted
D001H003	Output Specification	D/00260	02048/000016	Extracted
D002T001	Text	D/00260	02048/000002	Extracted
D002C002	CGM	F/00080	00800/000006	Extracted
D002R003	Raster	F/00128	02048/000017	Extracted
D002Q004	IGES	F/00080	02000/000012	Extracted
D002G005	DTD	D/00260	02048/000010	Extracted
D002H006	Output Specification	D/00260	02048/000061	Extracted

```
Catalog Process terminated normally.
```

9.2 Tape Evaluation Log

```
Air Force CALS Test Network Tape Evaluation - Version 1.2; Release 10 (C)
  Standards referenced:
    ANSI X3.27 (1987) - File Structure and Labeling of Magnetic Tapes
                        for Information Interchange
    ANSI X3.4 (1986) - Coded Character Sets - 7 Bit ASCII

Tue Aug  3 15:09:51 1993

ANSI Tape Import Log

Allocating tape drive /dev/rmt0...

/dev/rmt0 allocated.

VOL1ITDS01                CONTROLLER                                        4

  Label Identifier: VOL1
  Volume Identifier: ITDS01
  Volume Accessibility:
  Owner Identifier:
  Label Standard Version: 4

HDR1D001             ITDS0100010001000100 93210 93210 000000  CONTROLLER

  Label Identifier: HDR1
  File Identifier: D001
  File Set Identifier: ITDS01
  File Section Number: 0001
  File Sequence Number: 0001
  Generation Number: 0001
  Generation Version Number: 00
  Creation Date:  93210
  Expiration Date:  93210
  File Accessibility:
  Block Count: 000000
  Implementation Identifier:   CONTROLLER

HDR2D0204800260                                    00

  Label Identifier: HDR2
  Recording Format: D
  Block Length: 02048
  Record Length: 00260
  Offset Length: 00

************ Tape Mark ***************
```

```
  Actual Block Size Found = 2048 Bytes.

  Number of data blocks read = 1.

************ Tape Mark ***************

EOF1D001              ITDS0100010001000100 93210 93210 000001  CONTROLLER

  Label Identifier: EOF1
  File Identifier: D001
  File Set Identifier: ITDS01
  File Section Number: 0001
  File Sequence Number: 0001
  Generation Number: 0001
  Generation Version Number: 00
  Creation Date:  93210
  Expiration Date:  93210
  File Accessibility:
  Block Count: 000001
  Implementation Identifier:   CONTROLLER

EOF2D0204800260                                    00

  Label Identifier: EOF2
  Recording Format: D
  Block Length: 02048
  Record Length: 00260
  Offset Length: 00

************ Tape Mark ***************

                    <<<<< PART OF LOG FILE REMOVED HERE >>>>>

************ Tape Mark ***************

############ End of Volume ITDS01 ###############

############ End Of Tape File Set ###############

Deallocating /dev/rmt0...

Tape Import Process terminated normally.
```

9.3 Tape File Set Validation Log

```
Air Force CALS Test Network File Set Evaluation - Version 1.2; Release 10 (C)

  Standards referenced:
    MIL-STD-1840A (1987) - Automated Interchange of Technical Information

Tue Aug  3 15:10:07 1993

MIL-STD-1840A File Set Evaluation Log

File Set: Set006

Found file: D001
Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...

srcsys: John P. Kent, ITDS Chief Engineer, Northrop Corporation, B-2 Division,
L591/UB, 8900 E. Washington Blvd., Pico Rivera, CA 90660-3765 (310) 948-0624
srcdocid: STPRO25.2.4
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19930729
dstsys: Jeff Fisher, Integration Manager, USAF Air Force CALS Test Bed, HQ AFMC
(I)/ENCT, TechneCenter, 4027 Col. Glenn Highway, Dayton, OH 45431-1601
dstdocid: STPRO25.2.4
dstrelid: NONE
dtetrn: 19930729
dlvacc: NONE
filcnt: T1, H1, G1
ttlcls: UNCLASSIFIED
doccls: UNCLASSIFIED
doctyp: TEST DOCUMENT
docttl: Test Document STPRO25.2.4

                    <<<<< PART OF LOG FILE REMOVED HERE >>>>>

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

No errors were encountered in Document D001.

Found file: D002
```

Extracting Document Declaration Header Records...
Evaluating Document Declaration Header Records...

srcsys: John P. Kent, ITDS Chief Engineer, Northrop Corporation, B-2 Division, L591/UB, 8900 E. Washington Blvd., Pico Rivera, CA 90660-3765 (310) 948-0624
srcdocid: STPRO25.2.5
srcrelid: NONE
chglvl: ORIGINAL
dteisu: 19930729
dstsys: Jeff Fisher, Integration Manager, USAF Air Force CALS Test Bed, HQ AFMC (I)/ENCT, TechneCenter, 4027 Col. Glenn Highway, Dayton, OH 45431-1601
dstdocid: STPRO25.2.5
dstrelid: NONE
dtetrn: 19930729
dlvacc: NONE
filcnt: T1, H1, G1, C1, Q1, R1
ttlcls: UNCLASSIFIED
doccls: UNCLASSIFIED
doctyp: TEST DOCUMENT
docttl: Test Document STPRO25.2.5

<<<<< *PART OF LOG FILE REMOVED HERE* >>>>>

Evaluating numbering scheme...
No errors were encountered during numbering scheme evaluation.
Numbering scheme evaluation complete.

Checking file count...
No errors were encountered during file count verification.
File Count verification complete.

No errors were encountered in Document D002.

No errors were encountered in this File Set.

MIL-STD-1840A File Set Evaluation Complete.

10. Appendix B - Detailed IGES Analysis

10.1 File D002Q004

10.1.1 Parser/Verifier Log

```
************************************
*****  IGES PARSER/VERIFIER   *****
*****       MARCH 1993        *****
*****   IGES Data Analysis    *****
*****     (708) 344-1815      *****
************************************

Input file is /novell/9377/D002Q004_IGS

Checking conformance to CALS Class I (MIL-D-28000A 2/10/92)

Today is August 3, 1993  4:15 PM

************************************
*****    CHECK FILE SYNTAX    *****
************************************

   Section        Records

   Start              7
   Global             3
   Directory         82  (     41 Entities)
   Parameter        192
   Terminate          1

NITPICK 2489: Excess precision in real constant (3.57988857) for XS of D
3.
NITPICK 2489: Excess precision in real constant (3.8421068) for YS of D
3.
NITPICK 2489: Messages regarding excess precision suppressed.

************************************
*****  SUMMARY AND STATISTICS  ****
************************************

*** File and Product Name Information ***

   File name from sender     = 'Q004.iges'
   File creation Date.Time   = '930729.142344'
   Model change Date.Time    = ''
```

```
   Author                    = 'tom'
   Department                = 'GRAPHICS'
   Product name from sender  = 'Q004.iges'
   Destination product name  = 'Q004.iges'

*** Parameter Delimiters ***

   Delimiter  = ','
   Terminator = ';'

*** Originating System Data ***

   System ID              = 'ITDS CONVERTER: GEF_IGES'
   Preprocessor version   = '1.0'
   Specification version  = 6 (IGES 4.0)

*** Precision levels ***
   Integer bits =    32
   Floating point  -  Exponent =    38  Mantissa =     6
   Double precision - Exponent =   308  Mantissa =    15

*** Global Model Data ***

   Model scale             =  1.0000E+00
   Unit flag               =  1
   Units                   =  'IN'
   Line weights            =  3
   Maximum line thickness  =  1.000000E-02
   Minimum line thickness  =  3.333333E-03
   Granularity             =  1.000000E-03
   Maximum coordinate      =  2.954101E+00

   Drafting standard applicable to original data is not specified.

*** Status Flag Summary ***

 Blank status:  Visible                    41
                Blanked                     0

 Independence:  Independent                39
                Physically Subordinate      0
                Logically Subordinate       2
                Totally Subordinate         0

 Entity use:    Geometry                   39
                Annotation                  2
                Definition                  0
                Other                       0
                Logical/Positional          0
```

	2D parametric	0
	Construction geometry	0
	Not Specified	0
Hierarchy:	Structure DE applies	0
	Subordinate DE applies	41
	Hierarchy property applies	0
	Not Specified	0

*** Entity Occurrence Counts ***

Entity	Form	Level	Count	Type
106	11	0	24	Copious data - Piecewise planar, linear string(2D linear path)
106	63	0	8	Simple closed planar curve
110	0	0	6	Line
404	0	0	1	Drawing
406	16	0	1	Property - Drawing size
410	0	0	1	View - Orthographic parallel

*** Entity Count by Level ***

Level	Count
0	41

*** Labeling Information ***

0% of the entities are labeled.

Unlabeled 41

*** Line Fonts Used in Data ***

100	102	104	106	108	110	112	114	
-	-	-	-	-	-	-	-	Undefined
-	-	-	32	-	6	-	-	Solid
-	-	-	-	-	-	-	-	Dashed
-	-	-	-	-	-	-	-	Phantom
-	-	-	-	-	-	-	-	Center-line
-	-	-	-	-	-	-	-	Dotted

<<<<< PART OF LOG FILE REMOVED HERE >>>>>

*** Line Widths Used in Data ***

Weight	Count	Width

```
  Defaulted       31      (0.0033)
       2          10      (0.0067)

 *** Colors Used in Data ***

  Defaulted        3
        Red        8
      Green       30

 ************************************
 *****     ENTITY ANALYSIS      *****
 ************************************

 *** Entity type: 106

 *** Entity type: 110

  --      6 lines averaging 1.362447E-01 units --

 *** Entity type: 404

Drawing at D      5 contains 1 views.
Drawing at D      5 contains 0 annotation entities.
WARNING 2492: Undefined line font value (0) specified for D      5.

 *** Entity type: 406

WARNING 2492: Undefined line font value (0) specified for D      3.

 *** Entity type: 410

  Scale of view at D      1 is 1.000000E+00.
Orthographic View entity at D      1 has  0 clipping planes specified.
   XMIN = Not Set       XMAX = Not Set
   YMIN = Not Set       YMAX = Not Set
   ZMIN = Not Set       ZMAX = Not Set

WARNING 2492: Undefined line font value (0) specified for D      1.

 *** Message Summary ***

2038: 3 Invalid Line font values.

 *** Error Summary ***

     0 fatal errors
     0 severe errors
     0 errors
```

```
     3 warnings
     0 cautions
   842 nitpicks
     0 notes

*** End of Analysis of /novell/9377/D002Q004_IGS ***
```

10.1.2 Parser Log - AutoCAD R12

```
Title: IGESIN Journal (v5.1 Nov 05 1992)
================================================================================ =
File: B:\Q204.xli
Date: Tue, Aug 03, 1993
Time: 23:20:11
================================================================================ =

EVALUATION VERSION -- NOT FOR RESALE

Translator S/N:   117-10075750
Translating from IGES file:        B:\Q204.IGS
            to AutoCAD Drawing:    UNNAMED.dwg

========== ========== ========== ========== ========== ========== ========== ========== =

Options obtained from:  C:\ACAD\SUPPORT\IGES.OPT
Options Description: Configuration file for NIGESIN & NIGESOUT
Curves Approximated to Tolerance of            0.1
Surfaces Approximated to Tolerance of          0.1

Text Font/Style mapping:
IGES Text font      Style Name       ACAD Font
         0                SYMBOL0        iges0
         1               STANDARD        iges0
         2               STANDARD        iges0
         3               STANDARD        iges0
         6               STANDARD        iges0
        12                 GOTHIC        iges0
        13                 GOTHIC        iges0
        14                 ROMANS        iges0
        17               STANDARD        iges0
        18               STANDARD        iges0
        19               STANDARD        iges0
      1001                SYMBOL1     iges1001
      1002                SYMBOL2     iges1002
      1003                SYMBOL3     iges1003
      2001                  KANJI      bigfont

Annotation Angular Tolerance =         0.01

IGES Linefont/AutoCAD Linetype mapping
IGES Line Font      AutoCAD linetype        Shape file
         0                   BYLAYER             acad.lin
         1                CONTINUOUS             acad.lin
         2                    DASHED             acad.lin
         3                   PHANTOM             acad.lin
```

```
        4                    CENTER              acad.lin
        5                       DOT              acad.lin

Named matrices translated to AutoCAD UCS's.

106 forms 1-3 and 31-38 not placed in a block.

IGES trace information attached as XED

================================================================================ =

Parse phase

================================================================================ =
Start Section:

CONFORMANCE:
  MIL-D-28000 Amendment1, 20 December 1988
  Technical Illustration Class I Subset

ILLUSTRATION IDENTIFIER:
  Q004.iges

Global Section:

Parameter Delimiter:      ,
Record Delimiter:         ;
Sending Product ID:       Q004.iges
File Name:                Q004.iges
System ID:                ITDS CONVERTER: GEF_IGES
Preprocessor Version:     1.0
Size of Integer:          32
Sgl. Precision Mag:       38
Sgl. Precision Sig:       6
Dbl. Precision Mag:       308
Dbl. Precision Sig:       15
Receiving Product ID:     Q004.iges
Model Space Scale:        1.000000
Unit Flag:                1
Unit String:              IN
# of Line Weights:        3
Maximum Line Width:       0.010000
Creation Date:            07/29/93 14:23:44
Minimum Resolution:       0.001000
Maximum Coordinate:       2.954101
Author:                   tom
Organization:             GRAPHICS
IGES Version Number:      6
Drafting Standard:        0
```

Entity Summary:

Type	Form	Description	Count
106	11	Planar Piecewise Linear Curve	24
106	63	Simple Closed Planar Curve	8
110	0	Line	6
404	0	Drawing (form 0)	1
406	16	Property (Drawing Size)	1
410	0	View	1
		Total	41

Translation phase

```
Drawing Entity (404 Form 0) at DE 5, with
   name = ,
   size = 3.579889, 3.842107,
   units = IN,
was processed in the AutoCAD drawing file:  C:\UNNAMED.dwg

*** Warning (ACAD_NEW_VIEW_VOLUME_GENERATED) ***
( DE: 1 TF: 410:0 )
A new view volume has been generated for the view with:
 XMIN (-3.565349), XMAX (0.844311),
 YMIN (-1.296656), YMAX (3.362281),
 ZMIN (-0.500106), ZMAX (0.500106).
```

IGES Entity Summary

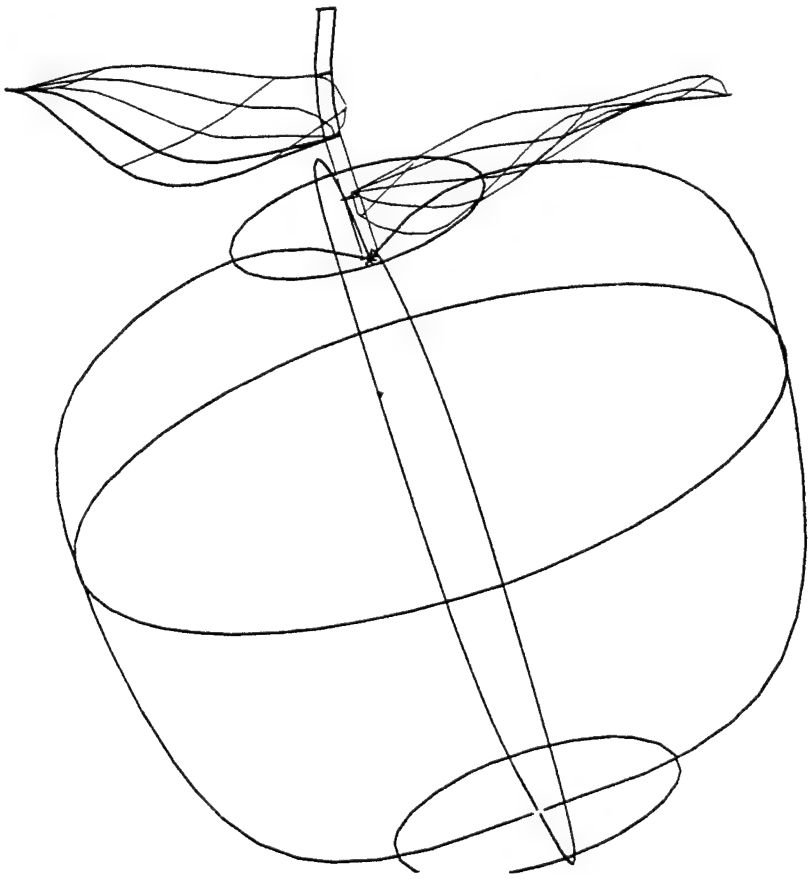
Type	Form	Description	Count	Processed	Errors
106	11	Planar Piecewise Linear Curve	24	24	0
106	63	Simple Closed Planar Curve	8	8	0
110	0	Line	6	6	0
404	0	Drawing (form 0)	1	1	0
406	16	Property (Drawing Size)	1	1	0
410	0	View	1	1	0
Totals			41	41	0

AutoCAD Entity Summary

Entity	Created	Errors
LINE	6	0
POLYLINE	32	0

```
 Totals     =======  ======
                 38       0
================================================================================ =
Error Summary:

The following message was issued 1 time(s)
A new view volume has been generated for the view with:
 XMIN (%lf), XMAX (%lf),
 YMIN (%lf), YMAX (%lf),
 ZMIN (%lf), ZMAX (%lf).

Status:  0
Warning: 1
Error:   0
Fatal:   0

Elapsed Time:

Processor: 00:00:16
Clock:     00:00:17
================================================================================
```

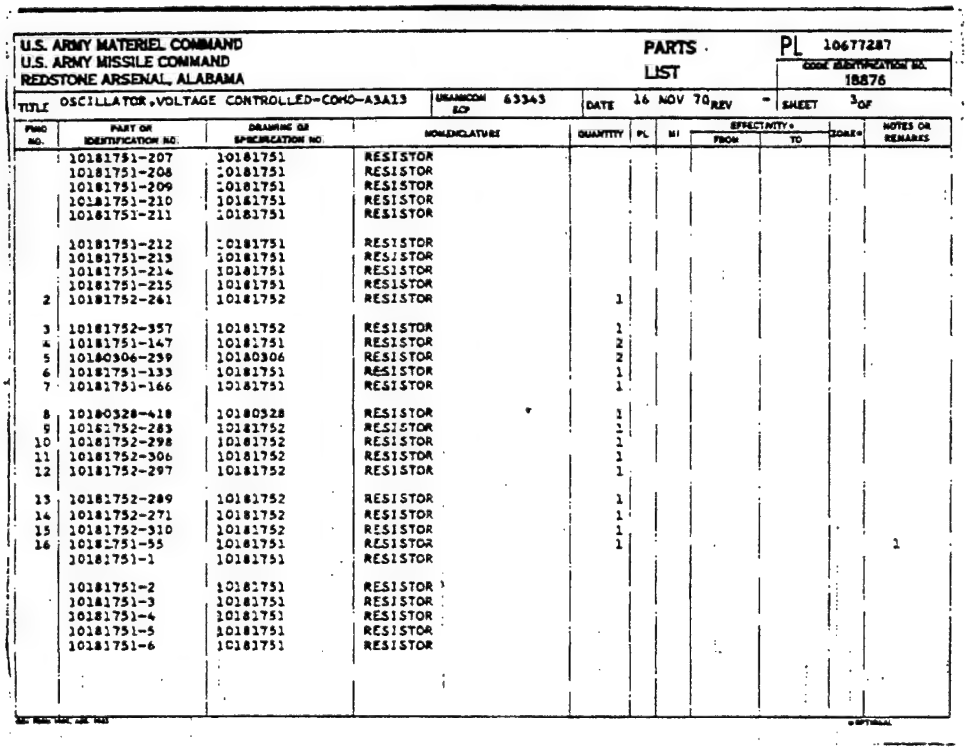
10.1.3 Output IGESView



11. Appendix C - Detailed Raster Analysis

11.1 File D002R003

11.1.1 Output IGESView



U.S. ARMY MATERIEL COMMAND
U.S. ARMY MISSILE COMMAND
REDSTONE ARSENAL, ALABAMA

PARTS LIST

PL 10677287
CODE IDENTIFICATION NO. 18876

TITLE OSCILLATOR,VOLTAGE CONTROLLED-COHO-A3A13 | USAMICOM ECP 63343 | DATE 16 NOV 70 REV - | SHEET 3 OF

FIND NO.	PART OR IDENTIFICATION NO.	DRAWING OR SPECIFICATION NO.	NOMENCLATURE	QUANTITY	PL	NI	EFFECTIVITY FROM	EFFECTIVITY TO	CODE	NOTES OR REMARKS
	10181751-207	10181751	RESISTOR							
	10181751-208	10181751	RESISTOR							
	10181751-209	10181751	RESISTOR							
	10181751-210	10181751	RESISTOR							
	10181751-211	10181751	RESISTOR							
	10181751-212	10181751	RESISTOR							
	10181751-213	10181751	RESISTOR							
	10181751-214	10181751	RESISTOR							
	10181751-215	10181751	RESISTOR							
2	10181752-261	10181752	RESISTOR	1						
3	10181752-357	10181752	RESISTOR	1						
4	10181751-147	10181751	RESISTOR	2						
5	10180306-239	10180306	RESISTOR	2						
6	10181751-133	10181751	RESISTOR	1						
7	10181751-166	10181751	RESISTOR	1						
8	10180328-418	10180328	RESISTOR	1						
9	10181752-283	10181752	RESISTOR	1						
10	10181752-298	10181752	RESISTOR	1						
11	10181752-306	10181752	RESISTOR	1						
12	10181752-297	10181752	RESISTOR	1						
13	10181752-289	10181752	RESISTOR	1						
14	10181752-271	10181752	RESISTOR	1						
15	10181752-310	10181752	RESISTOR	1						
16	10181751-55	10181751	RESISTOR	1						1
	10181751-1	10181751	RESISTOR							
	10181751-2	10181751	RESISTOR							
	10181751-3	10181751	RESISTOR							
	10181751-4	10181751	RESISTOR							
	10181751-5	10181751	RESISTOR							
	10181751-6	10181751	RESISTOR							

12. Appendix D - Detailed CGM Analysis

12.1 File D002C002

12.1.1 Parser Log MetaCHECK

```
MetaCheck Version 2.10 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-93 CGM Technology Software
Execution Date: 08/04/93     Time:  07:39:52

Metafile Examined    : b:c202.cgm

Pictures Examined    : All
Elements Examined    : All
Bytes    Examined    : All

======================== Trace Report ========================

Tracing not selected.

============= CGM Conformance Violation Report ==============

No Errors Detected

========== CALS CGM Profile (MIL-D-28003) Report ============

No profile discrepancies detected.

================ Conformance Summary Report =================

MetaCheck Version 2.10 -- CGM/MIL-D-28003 Conformance Analyzer
Copyright 1988-93 CGM Technology Software
Execution Date: 08/04/93     Time:  07:39:57

Name of CGM under test: b:c202.cgm
Encoding              : Binary

Pictures Examined    : All
Elements Examined    : All
Bytes    Examined    : All

BEGIN METAFILE string : >C002.cgm<
METAFILE DESCRIPTION  : >NORTHROP B2 ITDS GEF, MIL-D-28003/BA<
                        >SIC-1<

Picture 1 starts at octet offset 200: >Picture 1<
```

Conformance Summary : This file conforms to the CGM specification.

This file meets the CALS CGM Profile (MIL-D-28003).

Summary of Testing performed and Errors Found:

1 Pictures Tested
272 Elements Tested
3978 Octets Tested

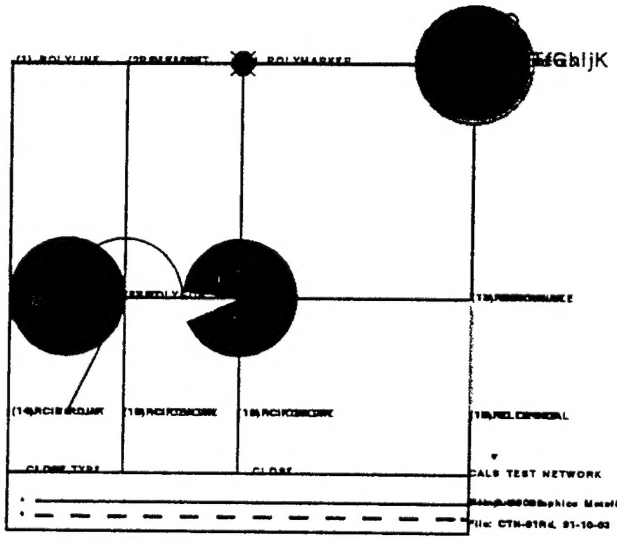
```
==================================
|    No Errors Were Detected     |
==================================
```

================ End of Conformance Report ================

12.1.2 validcgm Log

```
Analysis for file c202.cgm using table table
ERROR: illegal in this state (2), std B
ERROR: required precursor (0, 4) not yet seen
(14.1, 0)          (3, 6, 2)       Clip Indicator OFF
MILSPEC 28003 error: illegal hatch index
(173, 2352)        (5, 24, 2)      Hatch Index 6
(0, 1) occurred 1 time
(0, 2) occurred 1 time
(0, 3) occurred 1 time
(0, 4) occurred 1 time
(0, 5) occurred 1 time
(1, 1) occurred 1 time
(1, 2) occurred 1 time

                    <<<<< PART OF LOG FILE REMOVED HERE >>>>>

(3, 6) occurred illegally 1 time
(4, 1) occurred 32 times
(4, 3) occurred 5 times
(4, 4) occurred 50 times

                    <<<<< PART OF LOG FILE REMOVED HERE >>>>>

(5, 22) occurred 10 times
(5, 23) occurred 8 times
(5, 24) occurred 7 times
(5, 27) occurred 2 times
(5, 28) occurred 2 times
(5, 29) occurred 2 times
(5, 30) occurred 10 times
(5, 31) occurred 7 times
(5, 34) occurred 1 time
```

12.1.3 Output Harvard Graphics



12.1.4 Output CADLeaf